



**DEPARTMENT OF PHYSICS**  
**COLLEGE OF BASIC SCIENCE AND HUMANITIES**  
**OUAT, BHUBANESWAR – 751003**  
No-46/PHY /BSC Date 21/03/2018

**QUOTATION**

**Sealed quotations are invited for supply of the items as at Annexure-1 from the suppliers/vendor/reputed manufactures fulfilling the condition indicated below.**

**Interested Supplier / Firms should submit their quotation indicating their rates and VAT/taxes if any along with other terms and condition in a sealed cover for supply of the items. The quotation should reach the undersigned on or before 28.03.2018. The quotation should include installment charge of the equipments.**

**Conditions**

1. The firms must be registered under the OUAT Act-2004 and submit the Xerox copy of TIN Certificate along with the quotations.
2. The articles should reach F.O.R Bhubaneswar (College of Basic Science & Humanities) OUAT, Bhubaneswar.
3. The transporting charge will be borne by the supplier
4. Payment will be held up if defective material are supplied
5. The authority reserves the right to cancel or change the quotation without assigning reason
6. Warranty for a period of 36 months (3years) towards any manufacturing defects.

**HOD, PHYSICS**

Memo No.47/Phy, Dt.21.03.2018  
Copy to the College notice board for wide circulation.

**HOD, PHYSICS**

Memo No.48/Phy, Dt.21.03.2018  
Copy to the Director, College of Basic Science and Humanities for information and for display in the notice board.

**HOD, PHYSICS**

**Annexure-1**

**Quotation to be called for purchase of instruments for the year 2017-18**

**Name of the college/establishment—Department of physics, College of Basic science and Humanities, OUAT---Bhubaneswar-751003-----**

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Sl.no	Course	Item	Detailed technical specification	No.of units
1		Babinet's compensator(analysis of elliptically polarized light	Index scale, Vernier Scale, Wedge Box, Two wedges cut in mutually perpendicular direction of Optic axis. Long wedge is movable by means of micrometer drum.L.C-0.001 cm	
2		Polarisation using quarter wave plate	Light intensity of plane polarized light waves as a function of analyzer position, Verification of Malus Law Verification of Inverse square Law	
3		Zeeman effect Splitting of Spectral lines in presence of Magnetic field	Constant deviation Spectrograph, Constant deviation Prism, Strong electromagnet producing field of 15Kgauss,Neon discharge tube, H V D Wooden stand for Neon discharge tube, Power supply 0-3A per coil, Fabry perot etalon, Micrometer eye piece, Digital gauss meter, Condensing Lens	
4		Fabry-perot interferometer	Determination of Wavelength, Hyperfine Structure. Sodium light with complete set, Wavelength separation of D lines, Power supply	
5		Michelson's Interferometer	Wavelength of monochromatic light of Sodium light/He-Ne Laser, L C -.01 mm Magnification of Telescope 3x	
6		Energy gap o& Resistivity of germanium by four-probe method at Different Temperature	Four Probe Sample( Ge ,.50 mm),Oven (200 C 37 R ,45 V, digital Voltage Measurement, Constant Current Generator, Mercury Thermometer Range (0-	

			150) No -4 Power Supply	
7		Dielectric Constant and Curie Temperature Of Ferro Electric materials	DEC Sample, Probe Arrangement, Oven ,oven Controller, Digital Capacitance Meter,50-6000pf	
8		Diac Characteristics apparatus	2 Dc regulated power supply,0-15v Dc/150mA, v meters and Ameter Complete power cords and patch cords	
9		Triac Characteristics apparatus	2 Dc regulated power supply,0-15v Dc/150mA, v meters and Ameter Complete power cords and patch cords	
10		characteristics of a MOSFET	2 Dc regulated power supply,0-15v Dc/150mA,and 0-5v Dc /150mA3 meters and complete set	
11		Closed loop voltage gain and gain band width product of a –ve feedback amplifier	Audio Frequency Generator, Digital Ac voltmeter, CRO and complete set	
12		Curie Temperature for Ferro Electric Material	Digital Voltmeter,Audio Oscillator Standardv Capacitor,Dielectric Cell,PID control Thermocouple ,Oven	

13		Frequency response of RC coupled amplifier	A F Oscillator, A c milivoltmeter, Band Width, Voltage gain ,Frequency Response Curve	
14		Characteristics of operational amplifier a.As a deferentitor b.As a Integrator c.As a subtractor d.As a summer/adder e.As voltage follower f.As a schemeit trigger g.As inverting n non inverting amplifier	Power supply(1.5v) for IC 741,2 contineously variable power supply(0-5 volt),stair resistances(2.2k,4.7k,3.3k)5 no.s each,47k,1k,33k,5 no.s each and 10k 5no.s IC741-5No.s,spare plasti cotted single tinned copper wire,digital meter with selector switch to read $V_1, V_2, V_0$	
15		Transistor amplifier & amplification factor	Analog type, ,Twp regulated Power Supply, Four Meter, Quality Connecting leads(CE and CB mode)	
16		Surface tension of water by capillary rise method and to compare surface tension of two liquids	Travelling microscope,capillary tube apparatus with capillary tube clamp,250ml borosilicate glass beaker,rising table	
17		CE characteristics and CB characteristics	Two continuously variable regulated power upply, Voltmeter(2),Ammeter(2) Connecting lead	
18		Determine the Thermal conductivity of Copper using searles Conductivity apparatus	Searles Apparatus,Half degree Thermometer(2),Precesion Thermometer(110x1/10) Steam Generaor ,/Boiler Hot Plate,Digital; balance ,Stop Clock,Screw Gauge.	
19		LCR Impedance apparatus.AC Power factor	AC Power Supply,Band Switch AC Moving Coil meter.R-L-C (three sets)	
20		Zeeman effect	Constant deviation Spectrograph, Constant deviation Prism, Strong electromagnet producing field of 15Kgauss,Neon discharge tube,	

			H V D Wooden stand for Neon discharge tube, Power supply 0-3A per coil, Fabry perot etalon, Micrometer eye piece, Digital gauss meter, Condensing Lens	
21		Babinet's compensator(analysis of elliptically polarized light	Index scale, Vernier Scale, Wedge Box, Two wedges cut in mutually perpendicular direction of Optic axis. Long wedge is movable by means of micrometer drum.L.C-0.001 cm	
22		RC phase shift osciilator	RC phase shift osciilator Dual trace CRO	
23		To study Lissajous figure	DC regulated power supply of 115v Sign wave oscillation of 1khz frequency,C,R,SPDT switches potentiometers,IC741	
24		Co-efficient of viscosity by Searle's viscometer method	viscometer Searle's pattern, stop clock, venier caliper, physical weight box	
25		Co-efficient of viscosity by Capillary flow method	Poiseuille's viscosity apparatus, travelling microscope, stop clock, graduated cylinder, spirit level	
26		Young's Modulus by Bending of beam	Bending of beam apparatus,vernier calipers,g galvanometer,stabilized power supply, variable potentiometer, slotted weights 50ogmsx5,measuring tape	
27		P-N junction diode and study its V-I characteristics	I,C regulated power supply, Four meters,0-1.5 v 0-10 mA,(for Forward bias),0-35v and 0-50MicroA for reverse bias	
28		Triode characteristics	Power supply(0-300) volt aty 30mA,Four meters,,on/off switch,Indicator,Bias voltage (0-15v)	

29		Malus law for plane polarized light	Polarization of light and verification of Malus law	
30		Wave length and angular spread of He-Ne laser using plane diffraction grating	He-Ne Laser 2w, Mount for He-Ne Laser, Optical Bench For He-Ne Laser. Gratin and Holder. Screen	
31		Colpitts oscillator	Colpitts oscillator Dual trace CRO 12 V Dc Regulated Power Supply	
32		Tunnel diode characteristics Resistance Characteristics	Dc regulated Power Supply of % volts, Meter for measuring voltage across Resistance and Tunnel diode (0-2v) Current Control. Tunnel diode	

Sl.no	Course	Item	Detailed technical specification	No.of units
33		EMF of two given primary cells by using potentiometer	Two cells EMF are to be compared, 3 resistance box, 2 of low range and 1 of high range, galvanometer with lamp and scale arrangement, a storage cell, ammeter, a voltmeter (0-5v), one way key/battery eliminator two way key, a jockey, a set square, connecting wires and a piece of sand papers	
34		Determine Internal resistance of a given primary cells using potentiometer	Potentiometer, a battery/ battery eliminator, 2 one way key, a rheostat of low resistance, a galvanometer, a high resistance box, a fractional resistance box (1-10ohm), an ammeter, a voltmeter, a leclanche cell, a jockey, a set square, connecting wires and a piece of sand papers	
35		Frequency of the ac mains with a sonometer	Sonometer, slotted weights 500gms x 5, sensitive digital balance, transformer and electromagnet, stand for electromagnet	

36		Refractive index of a liquid by using convex lens & plane mirror	Convex lens,plane mirror,clean transparent liquid in beaker,an optical needle,an iron stand with base and clamp,arrangement plumb line plane glass slab,a spherometer,half meter scale,slide calipers,object pin	
37		Zener diode characteristics	Zener diode,2meter(analog model),DC regulated power	
38		Common emitter and common base npn or pnp Transistor characteristics	Analog version,2 variable regulated power supply,4meters,high quality connecting leads	
39		Verification of Ohm's law	5v and 500ma DCbattery eliminator of 6v and 500ma,4 different carbon resistance	
40		Refractive index of glass slab by using Travelling microscope	Travelling microscope,3 different thickness of glass slab,lycopodium powder	
41		Verification of laws of combination(series) of resistances by using meter bridge	Meter bridge apparatus with pencil jockey	
42		Verification of laws of combination(parallel ) of resistances by using meter bridge	Meter bridge apparatus with pencil jockey	
43		Focal length of a convex mirror using convex lens	An optical bench with four uprights,convex mirror and itsstands,convex lens and supported stands,two pins and pin stand,a knitting needle,a meter scale	

44		Focal length of a concave lens using convex lens	concave lens, a convex lens of power greater than that of the concave lens stand and pin stand, strip plane mirror, pinned lath and meter scale	
45		Determination the mass of two different objects using beam balance	Beam balance, weight box, forceps, two objects of different masses	
46		The weight of a given body using parallelogram law of vectors	A vertical wooden board with two pulleys, slotted weights, 2 hangers, a string, sheet of paper, drawing pins, a strip of mirror, wooden block, spring balance	
47		Young's modulus of elasticity of the material of a given wire	Young's modulus, measuring tape, slotted weight	
48		Surface tension of water by capillary rise method	Travelling microscope, capillary tube apparatus with capillary tube clamp, 250ml borosilicate glass beaker, rising table	
49		Specific heat capacity of a given solid by method of mixtures	Regnault's apparatus, calorimeter with lid and stirrer, calorimeter jacket, lead shots, hypsometer, burner, tripod stand, wire gauge, two $0.5^\circ$ thermometers, physical balance, weight box and fractional weights	
50		Resistance of given wire using meter bridge and hence find specific resistance of a given material	Meter bridge, fixed voltage power supply, two different resistance box, galvanometer, micrometer	





